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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,305	10/30/2003	Diane J. Hymes	LAM2P323D	1392

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EXAMINER

STAICOVICI, STEFAN

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,305

Applicant(s)

HYMES ET AL

Examiner

Stefan Staicovici

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/30/03; 2/24/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 1, line 5, after "2002," --now U.S. Patent No. 6,666,326 B2,-- should be inserted.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiou *et al.* (US Patent No. 6,635,211 B2) in view of Benedict *et al.* (US Patent No. 5,681,612).

Chiou *et al.* ('211) teach the basic claimed for making a reinforced polishing pad for chemical mechanical polishing including, providing a die having a cavity in the shape of a continuous loop defined by an inner die face and an outer die face; applying a reinforcing filler on said inner die face, said filler being oriented substantially in a circumferential direction of said continuous loop; filling said cavity partially with a polymeric material to encapsulate said reinforcing filler in a direction parallel to said circumferential direction of said continuous loop to form a sub-layer (first layer) of said polishing pad; and filling said cavity completely with said

polymeric material laminating to said sub-layer to form said continuous loop polishing pad (second layer) (see Abstract and, Figures 3 and 4B).

Regarding claims 1-3, 8, 10-11, 13-14 and 16-19, although Chiou *et al.* ('211) teach a non-woven fiber reinforcement, Chiou *et al.* ('211) do not teach a mesh reinforcement. Benedict *et al.* ('612) teach the use of both woven (mesh) and non-woven reinforcement layers in making an endless belt (see col. 18, lines 24-30 and col. 19, lines 32-68), wherein said woven structure may also be formed by aligning individual fibers in different directions. Therefore, it would have been obvious for one of ordinary skill in the art to have used a woven reinforcement as taught by Benedict *et al.* ('612) in the process of Chiou *et al.* ('211) because, Benedict *et al.* ('612) specifically teach woven (mesh) and non-woven reinforcement layers are equivalent alternatives and also because a woven structure provides for increased tear strength hence providing for an improved product.

In regard to claims 4-5, 15 and 20, Chiou *et al.* ('211) teaches cutting a window from the resulting continuous belt (see col. 3, lines 49-55) in order to permit end point detection of the polishing process.

Specifically regarding claim 6, Chiou *et al.* ('211) teaches stainless steel fibers (see col. 6, lines 24-25).

Regarding claim 7, Chiou *et al.* ('211) teaches polyurethane (see col. 7, line 33-35).

In regard to claims 9 and 12, Benedict *et al.* ('612) teach the use of both woven (mesh) and non-woven reinforcement layers in making an endless belt (see col. 18, lines 24-30 and col. 19, lines 32-68), wherein said woven structure may be formed from a plurality of layers having

different fiber orientation, fiber type, fiber size (see col. 18, lines 45-60; col. 21, lines 10-20; and Figure 6). It is submitted that a each additional fiber layer acts as a cushioning layer from subsequent layers and as such a hardness gradient exists through the thickness of the resulting endless belt obtained by the process of Benedict *et al.* ('612). Therefore, it would have been obvious for one of ordinary skill in the art to have used a plurality of reinforcement layers as taught by Benedict *et al.* ('612) in the process of Chiou *et al.* ('211) because, Benedict *et al.* ('612) specifically teach a plurality of reinforcement layers provides for increased strength, hence providing for an improved product.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni, can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD

A handwritten signature in black ink, appearing to read 'Stefan Staicovici', written in a cursive style.

Primary Examiner

8/7/05

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August 7, 2005